Notice of Allowability	Application No.	Applicant(s)	
	10/029,399	BATCHKO, ROBERT G.	
	Examiner	Art Unit	
	Leo Boutsikaris	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *communication of 1/26/07*.

2. ☒ The allowed claim(s) is/are *29-53 and 147-174*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

LEONIDAS BOUTSIKARIS
PRIMARY EXAMINER

Leo Boutsikaris, Ph.D., Esq.
Primary Patent Examiner, AU 2872
1/29/07

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Joshua D. Isenberg (Reg. No. 41,088) on 1/26/07.

The application has been amended as follows:

IN THE CLAIMS

Claim 29 is rewritten as follows:

29. A combinatorial optical processor, comprising one or more optical modules; wherein at least one of the one or more optical modules includes N addressable optical elements, where N is an integer greater than 1, wherein each addressable optical element is characterized by a first state focal length when the addressable optical element is in a first state and a second state focal length when the addressable optical element is in a second state, wherein the first state focal lengths for all N addressable optical elements are the same, and wherein the second state focal lengths of the N addressable optical elements are unique and, except for a smallest second state focal length, each second state focal length is twice as large as another second state focal length, wherein the N addressable optical elements are configured such that, depending on a state of each addressable optical element, the combinatorial optical processor may provide at least 2^N

addressable filter functions, wherein the N addressable optical elements are stacked in series such that light forming an image sequentially passes through all N addressable optical elements for all 2^N addressable filter functions, wherein each of the at least 2^N addressable filter functions produces a unique transform between an object and an image whereby there are at least 2^N unique transforms, wherein each unique transform produces an image of the object at a different image location, whereby there are 2^N different image locations[, wherein adjacent image locations are separated from each other by a constant separation distance].

Claim 147 is rewritten as follows:

147. A combinatorial optical processor, comprising one or more optical modules; wherein at least one of the one or more optical modules includes N randomly addressable optical elements, where N is an integer greater than 1, wherein each addressable optical element is characterized by a first state focal length when the addressable optical element is in a first state and a second state focal length when the addressable optical element is in a second state, wherein the first state focal lengths for all N addressable optical elements are the same, and wherein the second state focal lengths of the N addressable optical elements are unique and, except for a smallest second state focal length, each second state focal length is twice as large as another second state focal length, wherein the N randomly addressable optical elements are stacked in series such that light forming an image sequentially passes through all N addressable optical elements, wherein the N randomly addressable optical elements are configured such that, depending on a state of each randomly addressable optical element, the combinatorial optical processor may provide at least 2^N randomly addressable filter functions, wherein the N randomly addressable optical elements are stacked in series such that light forming an image sequentially

passes through all N addressable optical elements for all 2^N randomly addressable filter functions, wherein each of the at least 2^N randomly addressable filter functions produces a unique transform between an object and an image whereby there are at least 2^N different transforms, wherein an n^{th} transform is related to an $(n+1)^{th}$ transform in the same way as an $(n-1)^{th}$ transform is related to the n^{th} transform, wherein n is an integer between 1 and N-1, wherein one or more of the optical modules includes a nonlinear optical medium having one or more subsections that define one or more of the N addressable optical elements, wherein each unique transform produces an image of the object at a different one of the 2^N image locations[, wherein adjacent image locations are separated from each other by a constant separation distance].

Claims 175-176 are cancelled.

The following is an examiner's statement of reasons for allowance:

Claims 29-53, 147-174 are allowable over the prior art of record for at least the reason that even though the prior art discloses a combinatorial optical processor comprising a multitude of switchable elements, the prior art fails to teach or reasonably suggest a combinatorial optical processor having a plurality of selectable focal lengths, wherein the second state focal lengths of the N addressable optical elements are unique and, except for a smallest second state focal length, each second state focal length is twice as large as another second state focal length, as set forth by the claimed combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308. The examiner can normally be reached on M-F, 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEONIDAS BOUTSIKARIS
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